

TWO NEW RECORD GENERA AND THREE NEW SPECIES OF FORMICIDAE (HYMENOPTERA) FROM CHINA *

Zhenghui Xu

Department of Forest Protection, Southwest Forestry College, Kunming, 650224, China

(Received Sep. 25, 1997; accepted Jan. 15, 1998)

Abstract Three new species of the family Formicidae were discovered in Xishuangbanna Nature Reserve of Southern Yunnan, China, i. e. *Emeryopone melaina* sp. nov., *Myopias conicara* sp. nov. and *Myrmoteras cuneonodum* sp. nov. *Emeryopone* Forel and *Myrmoteras* Forel are new record genera in China. *Myopias* Roger is recorded in mainland of China for the first time.

Key words Formicidae, *Emeryopone*, *Myopias*, *Myrmoteras*, new species

Emeryopone Forel is a small genus which contains only 3 species until 1995 (Bolton 1995): 1 from Sumatra, 1 from Nepal, and 1 from Israel. Baroni Urbani (1975) and Bolton (1995) had systematic accounts of the genus separately.

The genus *Myopias* Roger is distributed in the Oriental, Indo-Australian, and Australasian Regions (Bolton 1994, Bingham 1903). According to Bolton (1995), 33 species of the genus were known in the world: 2 in Oriental, 28 in Indo-Australian, and 3 in Australasian. The first Chinese species, *M. nops*, was reported in Taiwan by Willey and Brown (1983).

Myrmoteras Forel is distributed in the Oriental and Indo-Australian Regions. 31 species of the genus were known in the world (Bolton 1995): 5 from Oriental and 26 from Indo-Australian. Moffett (1985) and Agosti (1992) revised the genus respectively.

During the course studying biodiversity of ants in Xishuangbanna Nature Reserve of Southern Yunnan, 3 new species belonging to *Emeryopone*, *Myopias*, and *Myrmoteras* of Formicidae respectively were discovered. Therefore, *Emeryopone* Forel and *Myrmoteras* Forel are newly recorded genera in China, *Myopias* Roger is recorded in mainland of China for the first time.

Standard measurements and indices are as defined in Willey and Brown (1983), Moffett (1985): Total length-TL, head length-HL, head width-HW, cephalic index-

* This study was supported by the National Natural Science Foundation of China (Project No. 39500118) and the Applied and Basic Research Foundation of Yunnan Province (Project No. 95C067Q).

CI = $HW \times 100 / HL$, scape length-SL, scape index-SI = $SL \times 100 / HW$, pronotal width-PW, alitrunk length-AL, maximum diameter of eye-ED, mandibular length-ML, mandibulo-cephalic index-MI = $ML \times 100 / HL$, petiolar node length-PNL, petiolar node width-PNW. All measurements are expressed in millimeters.

The type specimens are deposited in the Insect Collection, Department of Forest Protection, Southwest Forestry College, Kunming, Yunnan, China.

1 *Emeryopone* Forel, new record in China

Emeryopone Forel 1912 *Revue Suisse Zool.* 20:761. Type-species: *E. buttelreepeni* Forel.

Systematic position: Ponerinae, Ponerini.

***Emeryopone melaina* sp. nov. (Figs. 1-2)**

Holotype worker: TL 4.9, HL 1.10, HW 0.80, CI 80, SL 0.83, SI 104, PW 0.63, AL 1.47, ED 0.10, ML 0.80, MI 80, PNL 0.37, PNW 0.53. Head longer than broad, lateral sides slightly convex, occipital margin roundly depressed, occipital corners bluntly protruding. Clypeus with longitudinal central carena, anterior margin extruding into a blunt dent in the middle. Mandibles long and narrow, inner margin with 5 long teeth, apical tooth slender and curved. Eyes small, in full face view placed on the lateral margins, close to bases of mandibles. Antennal scapes just reach to occipital corners. In profile view, dorsum of alitrunk weakly convex, lowering down backward. Promesonotal suture distinct, metanotal groove disappear. Dorsum of propodeum very weakly convex, nearly straight; declivity obliquely truncate, shorter than dorsum. Petiolar node thick, in profile view rectangular, anterior and posterior faces slightly convex, dorsal face roundly convex; subpetiolar process rectangular, with a subtransparent oblique slit, anteroventral angle obliquely truncate, posteroventral angle blunt. Gaster conical, apical half curved downward. Sting long and strong. Mandibles smooth and shining. Head and gaster with moderately dense uniform large punctures, distance between two punctures shorter than diameter of a puncture. Dorsum of alitrunk and petiolar node finely and densely punctate, lateral sides of alitrunk with sparse large punctures and microrugae. Dorsum of head, antennae, and legs with abundant depressed pubescences, without hairs. Dorsa of occiput, alitrunk, petiolar node, and gaster with abundant suberect short hairs and rich depressed pubescences. Body in colour black; mandibles, antennae, legs, and apex of gaster reddish brown.

Paratype dealate female: TL 5.1, HL 1.03, HW 0.83, CI 81, SL 0.83, SI 100, PW 0.70, AL 1.60, ED 0.17, ML 0.87, MI 84, PNL 0.37, PNW 0.53 (n=1). Similar to holotype, but body larger; eyes larger, with 3 ocelli; occipital margin

weakly depressed; alitrunk with tegulae, mesopleuron with an oblique furrow; head, pronotum, and gaster dark reddish brown.

Holotype: Worker, Sanchahe, 960 m, Mengyang Town, Jinghong County, Yunnan Province, Feb. 27, 1997, No. A97-54 (Tiansheng Li). Paratype: 1 dealate female, with same data as holotype, No. A97-51 (Zhenghui Xu).

This new species is close to *E. buttelreepeni* Forel (Figs. 3-4), but body in colour black; in full face view occipital margin deeply concave; posteroventral angle of subpetiolar process without a denticle.

2 *Myopias* Roger

Myopias Roger 1861 *Berl. ent. Zeit.* 5:39. Type-species: *M. amblyops* Roger.

Systematic position: Ponerinae, Ponerini.

Myopias conicara sp. nov. (Figs. 5-7)

Holotype worker: TL 7.5, HL 1.50, HW 1.40, CI 93, SL 1.33, SI 96, PW 1.00, AL 2.20, ED 0.25, ML 1.35, MI 90, PNL 0.37. Head slightly longer than broad, broadest in front, narrowed posteriorly; in full face view, occipital margin nearly straight, occipital corners roundly prominent. Eyes placed on lateral sides, close to the bases of mandibles. Mandibles long and slender, slightly curved inward; inner margin with a blunt tooth near the center; masticatory margin narrow, oblique and slightly concave, with a very small denticle at basal 1/3, apical tooth acute, basal tooth triangular. Middle part of clypeus triangular, anterior margin roundly concave, anterolateral corners protruding and dentiform. Frontal lobes large, laterally expanded. Frontal furrow reached to midline of head. Antennal scapes surpass occipital corners by about 1/8 of its length; flagella incrassate towards apex, apical segment slightly longer than the preceding 2 segments combined. Ventral face of head with a conical tubercle in the middle and close to the anterior margin. In profile view, dorsum of alitrunk at the same level, promesonotal suture distinct and depressed, meta-notal groove slightly depressed. Mesonotum short, crescent in dorsal view. Dorsum of propodeum slightly convex, rounded into declivity, the latter nearly truncate, about as long as dorsum. In profile view, petiolar node quadrate, slightly higher than long; anterior face very weakly concave; posterior face truncate, each side with a vertical narrow depression close to the lateral margin; dorsal face roundly convex, anterodorsal angle and posterodorsal angle rounded, at the same height. In dorsal view, petiolar node about as long as broad, narrowing forwards, anterior margin slightly convex, anterolateral corners rounded, posterior margin straight. Subpetiolar process with a posteroventrally pointed triangular denticle at anteroventral corner, and with a

pair of small posteriorly pointed denticles at posteroventral corner. Anterior face of gaster truncate, constriction between the basal two segments distinct. Mandibles sparsely punctate, interspace smooth and shining. Head with abundant moderate large punctures, distance between punctures about equal to diameter of one puncture, interspace smooth and shining; punctures on central dorsum of head sparse. Dorsum of alitrunk, dorsum of petiolar node, and first gastral segment with sparse, large, elliptic punctures, interspace finely longitudinally rugulose, less shining; a longitudinal central strip on dorsa of pronotum and mesonotum without punctures; lateral sides of pronotum, and of petiolar node sparsely punctate; lateral sides of alitrunk finely longitudinally rugulose, opaque; declivity and posterior face of petiolar node superficially transversely rugulose, less shining. Gastral segments 2-6 smooth and shining, but anterior half of 2nd segment sparsely punctate. Head and body with abundant erect or suberect hairs and abundant decumbent pubescences. Antennal scapes with sparse suberect hairs and dense decumbent pubescences; hind tibiae with sparse decumbent hairs and dense depressed pubescences. Body in colour black; mandibles, antennae, legs, and apex of gaster reddish brown; hairs and pubescences light yellow.

Paratype dealate females: TL 8.5-9.4, HL 1.55-1.70, HW 1.40-1.65, CI 90-97, SL 1.30-1.50, SI 91-93, PW 1.23-1.33, AL 2.63-2.88, ED 0.33-0.38, ML 1.30-1.50, MI 84-88, PNL 0.80 ($n=2$). Similar to holotype, but body larger; head with 3 ocelli, conic tubercle on ventral face of head large and low; mesonotum large, with tegulae, transverse sutures and longitudinal furrows; dorsum of propodeum shorter than declivity.

Holotype: Worker, Longlin Village, 1 090 m, Mengla County, Yunnan Province, Mar. 5, 1997, No. A97-186 (Seping Dai). Paratypes: 1 dealate female, with same data as holotype; 1 dealate female, Sanchahe, 950 m, Jinghong County, Yunnan Province, Feb. 28, 1997, No. A97-73 (Yuchu Lai).

According to the character of petiolar node, this new species is close to *M. levigata* (Emery) (Figs. 8-9) from Papua New Guinea, but in profile view, subpetiolar process has a pair of posteriorly pointed small denticles at posteroventral corner; in dorsal view, lateral sides of petiolar node convex, anterolateral corners rounded. The new species is also close to *M. lorlai* (Emery) (Figs. 10-11) from Papua New Guinea, but in profile view, subpetiolar process has a triangular posteroventrally pointed denticle at anteroventral corner, and has a pair of small posteriorly pointed denticles at posteroventral corner; in dorsal view, petiolar node about as long as broad.

3 *Myrmoterus* Forel, new record in China

Myrmoterus Forel 1893 *Ann. Soc. Ent. Belg.* 37:607. Type-species: *M. binghamii* Forel.

Systematic position: Formicinae, Myrmoteratini.

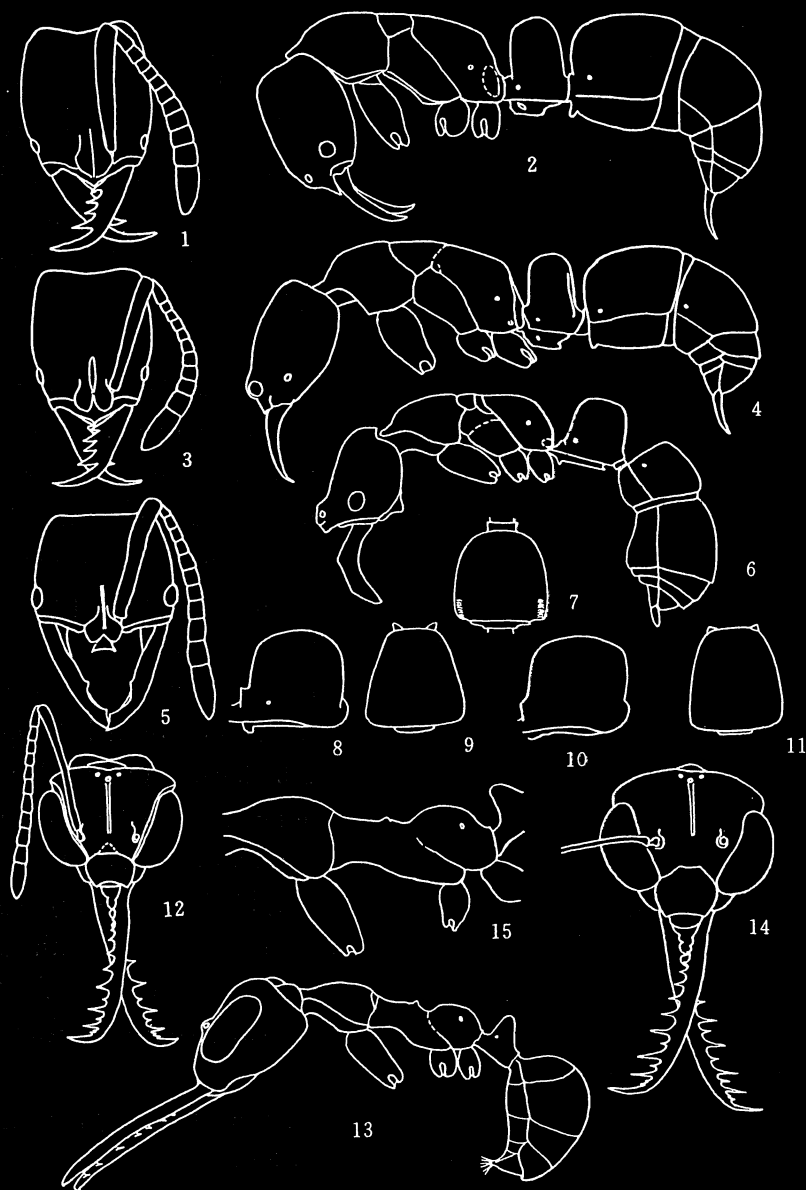
***Myrmoteras cuneonodum* sp. nov.** (Figs. 12-13)

Holotype worker: TL 5.0, HL 1.10, HW 1.03, CI 94, SL 1.10, SI 106, PW 0.60, AL 1.40, ED 0.63, ML 1.53, MI 139. Head nearly triangular, occipital corners extruding, nearly in right angle. Frontal sulcus distinct, narrow and deep, from middle ocellus to the level of antennal foveae. Mandibles long and slender, filiform, inner margin with 11 long teeth, becoming shorter successively from apex to base; with 2 small denticles between the apical 1st and 2nd teeth, the posterior one is smaller than the anterior one; between apical 2nd and 3rd, and 3rd and 4th teeth, each with 1 small denticle. Anterior margin of labrum straight, without a pair of long trigger hairs. Anterior margin of clypeus roundly concave, lateral sides extruding into sharp angles. Transverse sulcus behind clypeus distinct. Antennal scapes surpass occipital corners by about 1/2 of their length, flagella filiform. Eyes long elliptic, with 3 ocelli. In profile view, mesothorax constricted and cylindrical, metanotal spiracles protruding. Pronotum slightly convex. Dorsum and declivity of propodeum very weakly convex, nearly straight, declivity shorter than dorsum. In profile view, petiolar node cuneiform, narrowing upward, anterior face nearly straight, upper portion of posterior face slightly convex. Head and mandibles smooth and shining; central dorsum of head finely rugose, the rugae branching backward; genae below eyes with short oblique rugae. Pronotum, anterior part of mesonotum, and mesopleura smooth and shining; cervicum and propodeum transversely rugose; dorsum of the cylindrical portion of mesothorax granulate, the lateral sides roughly longitudinally rugose. Petiolar node and gaster smooth and shining. Dorsa of head and body with sparse erect hairs, pubescences absent, hairs on gaster abundant. Antennal scapes and hind tibiae with rich suberect hairs. Body in colour reddish brown; gaster dark reddish brown; mandibles, antennae, and legs brownish yellow.

Holotype: Worker, Sanchahe, 950 m, Mengyang Town, Jinghong County, Yunnan Province, Feb. 28, 1997, No. A97-79 (Yuchu Lai).

This new species is close to *M. marianneae* Agosti (Figs. 14-15), but occipital corners extruding, nearly in right angles; genae below eyes with only short oblique rugae; dorsum of mesothorax granulate except the anterior 1/4 portion.

Acknowledgements The author thanks Miss Seping Dai, Mr. Tiansheng Li and Yuchu Lai (Students of Department of Forest Protection, Southwest Forestry College, Kunming) for collecting the type specimens.



Figs. 1-15 Workers of *Emeryopone*, *Myopias*, and *Myrmoterias*.

1-2 *Emeryopone melaina* sp. nov. ; **3-4** *Emeryopone buttelreepeni* Forel (after Baroni Urbani); **5-7** *Myopias conicara* sp. nov. ; **8-9** *Myopias levigata* (Emery) (after Willey and Brown); **10-11** *Myopias lorlai* (Emery) (after Willey and Brown); **12-13** *Myrmoterias cuneonodum* sp. nov. ; **14-15** *Myrmoterias marianneae* Agosti (after Agosti); **1, 3, 5, 12, 14** head in full face view, **2, 4, 6, 13, 15** body in profile view, **7, 9, 11** petiolar node in dorsal view, **8, 10** petiolar node in profile view.

References

- Agosti D. 1992 Revision of the ant genus *Myrmoteras* of the Malay Archipelago (Hymenoptera: Formicidae). *Revue Suisse Zool.* 99(2):405-429.
- Baroni Urbani C. 1975 Contributo alla conoscenza dei generi *Belonopelta* Mayr e *Leiopelta* gen. nov. (Hymenoptera:Formicidae) *Mitt. Schw. Ent. Ges.* 48(3-4):295-310.
- Bingham C. T. 1903 The Fauna of British India including Ceylon and Burma. Hymenoptera 2. Ants and cuckoo-wasps. Taylor and Francis, London. pp. 1-414.
- Bolton, B. 1994 Identification Guide to the Ant Genera of the World. Harvard University Press Cambridge. pp. 1-222.
- Bolton B. 1995 A New General Catalogue of the Ants of the World. Harvard University Press Cambridge. pp. 1-504.
- Emery C. 1900-1901. Formiche raccolte da Elio Modigliani in Sumatra, Engano e Mentawai. *Ann. Mus. Civ. Stor. Nat. Gen.* (2)20(40):661-722.
- Moffett, M. W. 1985 Revision of the genus *Myrmoteras* (Hymenoptera: Formicidae). *Bull. Mus. Comp. Zool.* 151(1):1-53.
- Wiley, R. and W. L. Brown, Jr. 1983 New species of the ant genus *Myopias* (Hymenoptera: Formicidae:Ponerinae). *Psyche* 90:249-285.

中国蚁科二新记录属三新种记述 (膜翅目:蚁科)

徐正会 (西南林学院森林保护系, 昆明 650224)

在云南西双版纳自然保护区发现蚁科昆虫3新种:黑色埃猛蚁 *Emeryopone melaina* sp. nov., 锥头小眼猛蚁 *Myopias conicara* sp. nov., 楔结长齿蚁 *Myrmoteras cuneonodum* sp. nov.;埃猛蚁属 *Emeryopone* Forel 和长齿蚁属 *Myrmoteras* Forel 为中国新记录属;小眼猛蚁属 *Myopias* Roger 为中国大陆新分布属。模式标本保存于云南昆明,西南林学院森林保护系昆虫标本室。